



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,012	04/17/2006	Koji Sugiura	7378/88121	8811
43798	7590	12/04/2008		
FITCH, EVEN, TABIN & FLANNERY P. O. BOX 18415 WASHINGTON, DC 20036			EXAMINER KARPINSKI, LUKE E	
			ART UNIT	PAPER NUMBER
			1616	
			MAIL DATE	DELIVERY MODE
			12/04/2008 PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/576,012

**Applicant(s)**

SUGIURA ET AL.

**Examiner**

LUKE E. KARPINSKI

**Art Unit**

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

Receipt of arguments and remarks filed 7/15/2008 is acknowledged.

### ***Claims***

Claims 10-14 are new.

Claims 1-14 are pending and under consideration in this action.

### ***Rejections***

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

### ***Previous Rejections***

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 8 and 9 are rejected under 35 U.S.C. 112, second paragraph**, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claims 8 and 9 claim a method for inactivating a coronavirus comprising using the anti-coronaviral agent of claim 1 but

there is not one single step to demonstrate how the virus is to be inactivated or how the agent is to be used. For the purpose of conducting a complete examination the step of "using" will be interpreted by the examiner as "applying".

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**Claims 6 and 7 are rejected under 35 U.S.C. 112, first paragraph**, because the specification, while being enabling for products such as paint, cloth, paper, and plastics, does not reasonably provide enablement for **any** product. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The applicant claims any product comprising the anti-coronaviral agent.

Enablement is considered in the view of the Wands factors (MPEP 2164.01 (a)). These include the nature of the claims, breadth of claims, guidance of the specification, the existence of working examples, predictability of the prior art, and the state of the prior art. All of the Wands factors have been considered with regard to the instant claims, with the most relevant discussed below.

1. **Nature of the invention:** The claims are drawn to any product comprising the anti-coronaviral agent of claim 1.

2. **Breadth of the claims:** The claims are broad in that the claims encompass incorporation of the anti-coronaviral agent into any product.
3. **Guidance of the Specification:** The guidance provided by the specification reasonably demonstrates that the instant anti-coronaviral agent may be incorporated into cloth, paper, paint and plastics. However, the claim also encompasses incorporation of said agent into any product; the specification does not provide actual guidance or evidence supporting such a scope.
4. **Working Examples:** All of the working examples of products comprising said anti-coronaviral agent are drawn to cloth, paper, plastics, and paint. There are no other examples of products which may incorporate said agent.

Therefore, the broadness of the claims combined with the minimal guidance from the specification, the state of the art, and the lack of working examples, provides for undue experimentation to practice the scope of the instant claims.

### ***Response to Arguments***

Applicant's arguments filed 7/15/2008 have been fully considered but they are not persuasive.

Applicant argues that disclosure of several products and general types of materials, such as paper, cloth, and paint, provides enablement for **ANY** product.

This argument is not found persuasive. Although applicant is enabled for a great many products, which are made by utilizing the disclosed materials, the applicant is not enabled for **ANY** product.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-7 are rejected under 35 U.S.C. 102(b)** as being anticipated by US Patent No. 6,187,456 to Lever as evidenced by "Viral Pathogens and Severe Acute Respiratory Syndrome: Oligodynamic Ag+ for Direct Immune Intervention" by Rentz.

Lever discloses an antimicrobial agent which comprises a silver ion carrier, specifically silver zirconium phosphate (col. 3, lines 6-8). The antimicrobial effects of the compound disclosed in Lever will also necessarily have anti-coronaviral, specifically anti-SARS effects as evidenced by Rentz (page 114, lines 3-16).

Lever also discloses silver zirconium phosphate incorporated into a product (col. 3, lines 15-19 and col. 4, example 3).

Thus claims 1-7 are deemed anticipated by Lever as evidenced by Rentz.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**1. Claims 8 and 9 are rejected under 35 U.S.C. 103(a)** as being unpatentable over US Patent no. 6,1887,456 to Lever in view of "Viral Pathogens and Severe Acute Respiratory Syndrome: Oligodynamic Ag+ for Direct Immune Intervention" by Rentz.

***Applicant Claims***

Applicant claims a method for inactivating a coronavirus which comprises using the anti-coronaviral agent of claim 1. The applicant further claims the coronavirus is the SARS virus.

***Determination of the Scope and Content of the Prior Art (MPEP §2141.01)***

Lever teaches an anti-microbial agent (col. 3, lines 6-8) as claimed in claims 8 and 9.

***Ascertainment of the Difference between Scope the Prior Art and the Claims (MPEP §2141.012)***

1. Lever does not teach the inactivation of a coronavirus or SARS through contact with the anti-coronaviral agent as claimed in claims 8 and 9. This deficiency in Lever is cured by Rentz. Rentz teaches inactivation of bacteria through contact with Ag+ and that viral organisms may have the same susceptibilities (page 110, lines 31-38).

***Finding of Prima Facie Obviousness Rational and Motivation (MPEP §2142-2143)***

1. Regarding claims 8 and 9, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to inactivate a coronavirus through contact with an anti-coronaviral agent, as taught by Rentz in order to produce the invention of instant claims 8 and 9.



One of ordinary skill in the art would have been motivated to do this because Rentz teaches that in order for Ag+ to inactivate a virus it must contact said viral cell so that it may arrest life-essential reactions within said cell. Therefore it would have been obvious to contact the anti-coronaviral agent of Lever with the virus, as taught by Rentz in order to produce the methods of claims 8 and 9.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Thus instant claims 8 and 9 are deemed to be obvious by Lever in view of Rentz.

### ***Response to Arguments to 102 and 103 rejections***

Applicant's arguments filed 7/15/2008 have been fully considered but they are not persuasive.

The applicant argues that the art fails to teach the silver ion carrier as having an anti-coronaviral effect.

This argument is not persuasive because Lever teaches the exact same compound as claimed. The fact that applicant claims a property of said compound does not make it patentable. The compounds of Lever inherently possess an anti-coronaviral effect, as it is described as being antimicrobial, and further because silver is a well-known anti-viral compound.

Applicant also argues that one would not expect the compounds of Lever to have an anti-coronaviral effect.

This argument is not found persuasive because it does not matter if a property of said compound is expected or not, the same compound as claimed is disclosed in the prior art and would inherently have an anti-coronaviral and anti-SARS effect.

Applicant also argues that Rentz teaches different silver containing compound having different antiviral properties, therefore one would not expect the compositions of Lever to have anti-coronaviral properties.

This argument is not found persuasive. In addition to the expectedness having no bearing in this situation, silver is known to have anti-viral properties and it is reasonable to state that one of ordinary skill in the art would try any silver compound in methods of effecting virus', as the silver ion, at least, has anti-viral properties.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, applicant argues that the anti-viral properties of silver zirconium phosphate do not come from the silver but from peroxides formed from reactions catalyzed by the silver zirconium phosphate, and therefore there is no reason to combine Lever and Rentz.

Kourai et al., cited by applicant, states that the anti-viral properties do not come from the silver. This argument is not found persuasive because it is well known that silver has anti-viral properties. Although the silver zirconium phosphate may additionally have other anti-viral effects, it would be expected that any silver complex would also contain silver ions, which would have anti-viral effects. Further, Lever teaches said silver zirconium phosphate to have antimicrobial properties. Therefore it is reasonable to state the one would see reason to combine the cited references and try silver zirconium phosphate in combating coronavirus<sup>1</sup>.

***New rejections***

***Claim Rejections - 35 USC § 103***

**1. Claims 10-14 are rejected under 35 U.S.C. 103(a)** as being unpatentable over US Patent No. 6,187,456 to Lever, as applied to claim 6 above, in view of US Patent No. 6,296,863 to Trogolo et al.

***Applicant Claims***

Applicant claims the product of claim 6, wherein the product is selected from paint, cloth, paper, plastic, and products made from said materials.

***Determination of the Scope and Content of the Prior Art (MPEP §2141.01)***

The teachings of Lever et al. are delineated above. In particular Lever discloses that it is known to incorporate antimicrobial compositions within household products, plastics and fibers (col. 1, lines 30-40).

***Ascertainment of the Difference between Scope the Prior Art and the Claims  
(MPEP §2141.012)***

Lever does not teach incorporation of silver compounds into paints, cloth, paper, or any of the specific products recited in claims 10-14. This deficiency in Lever is cured by Trogolo et al. Trogolo et al. teach the incorporation of silver complexes into plastics, paper, cloth, flooring, and paint (col. 4, lines 12-30).

***Finding of Prima Facie Obviousness Rational and Motivation  
(MPEP §2142-2143)***

Regarding claims 10-14, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to incorporate silver ion carrier of Lever in paper, cloth, plastic, paint, floors, and products made from said materials as taught by Trogolo in order to produce the invention of instant claims 10-14.

One of ordinary skill in the art would have been motivated to do this because Lever teaches the incorporation of silver ion carriers into plastics and household articles and Trogolo et al. teach several other materials and products which silver ion carriers may be incorporated into. Therefore it would have been obvious to incorporate into the

materials and products of Trogolo et al., the silver ion carriers of Lever in order to impart antimicrobial properties onto said products and materials.

From the teachings of the reference, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

### ***Conclusion***

Claims 1-14 are rejected.

No claims are allowed.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Inquiries***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUKE E. KARPINSKI whose telephone number is (571)270-3501. The examiner can normally be reached on Monday Friday 9-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LEK

/Mina Haghighatian/  
Primary Examiner, Art Unit 1616

